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Foundry Industry's Hazardous Waste Management of Major Concern to U.S. EPA

Two goals of the Resource Conservation and Recovery Act (RCRA) are to protect human health and the environment from the potential hazards of waste disposal and ensure that wastes are managed in an environmentally sound manner.

In support of these important environmental and public health goals, the U.S. Environmental Agency (EPA) has identified the foundry industry as a national priority as evidence obtained through Regional and state investigation indicates that many owners and operators of foundries are failing to properly manage hazardous waste. Noncompliance with RCRA, such as failing to identify or properly store hazardous wastes, could result in the release of toxic metals (e.g., lead and chromium), which may cause serious threats to public health and the environment. Accordingly, EPA has taken enforcement actions (i.e., imposing civil penalties and ordering the removal of lead-contaminated foundry sand), issued rules, and, along with states, has heightened its scrutiny of the industry.

In this issue of *Enforcement Alert*, EPA highlights:

- EPA's focus on nationwide foundry noncompliance issues;
- RCRA and regulatory requirements for foundry operations; and
- EPA Regional enforcement efforts to determine the scope of potential RCRA noncompliance by foundries, and EPA Region 6's compliance assistance program to educate local foundries on the law's requirements.

Agency to Focus on RCRA Noncompliance Issues at Foundries Nationwide

EPA Looking at Foundry Noncompliance Nationwide

From information obtained through Regional investigations, EPA is expanding its focus on foundries nationwide. Specifically, EPA will be looking at foundries that are:

- Non-notifiers (i.e., operations that have failed to notify the states or EPA of their hazardous waste activities);
- Failing to characterize hazardous wastes (e.g., foundry sand for metals content);
- Improperly storing and managing wastes; and
- Operating thermal units without a RCRA permit.

EPA encourages foundry owners and operators to take affirmative steps to ensure they are in compliance with all applicable RCRA requirements.

RCRA Compliance Requirements for Foundry Operations

Owners and operators of foundries may be subject to RCRA and applicable regulations found at 40 C.F.R. Parts 260-271. Based on field inspection results and other information, EPA has

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About Enforcement Alert

"Enforcement Alert" **is published periodically by the Office of Regulatory Enforcement to inform and educate the public and regulated community of important environmental enforcement issues, recent trends and significant enforcement actions.**

This information should help the regulated community anticipate and prevent violations of federal environmental law that could otherwise lead to enforcement action. Reproduction and wide dissemination of this newsletter is encouraged.

See Page 4 for useful compliance assistance resources.

Eric V. Schaeffer
Director, Office of Regulatory Enforcement

Editor: Virginia Bueno
(202) 564-8684
bueno.virginia@epamail.epa.gov
(Please email all address and name changes or subscription requests for this newsletter.)

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identified situations where owners and operators may not be in compliance due to incorrect interpretations of environmental requirements. Several of these requirements are discussed below:

Notification: The owner or operator of a foundry generating hazardous waste must obtain an EPA Identification Number (ID) and notify the Agency (or the state, as appropriate) of the location and general descriptions of hazardous waste activities. The notification must identify or list the hazardous waste managed by the facility's owner or operator. Hazardous waste may not be transported, treated, stored, or disposed of without notification of hazardous waste activity and the use of an EPA ID number.

Waste Identification: In response to inquiries from the American Foundrymen's Society (AFS), EPA explained in March 1995 its long-standing position about how hazardous waste regulations apply to foundry sand. More specifically, foundry sand (after being separated from the castings at the shakeout table) is a "solid waste" that is subject to RCRA. At this point, the used foundry sand, a "spent material," contains contaminants that must be removed from the sand prior to its reuse in the making of the molds. Spent foundry sand may be reclaimed through regeneration (i.e., removal of contaminants); however, the spent foundry sand is still considered a solid waste even though it is being recycled.

If a solid waste, such as spent foundry sand, is determined to be a hazardous waste and is to be recycled, the waste is subject to 40 C.F.R. § 261.6 as a "recyclable material." Generally, the following persons must notify EPA (or the state, as appropriate) of its hazardous waste activity and comply with certain RCRA regulations:

- Generators and transporters of recyclable materials;
- Owners and operators of facilities that store recyclable materials before they are recycled;
- Owners and operators of facilities that recycle recyclable materials without storing them before they are recycled; and
- Owners and operators of facilities with hazardous waste management units subject to RCRA air emission standards (e.g., 40 C.F.R. Part 264, Subpart CC) recycling hazardous waste.

Once the sand is completely reclaimed, removed from the reclamation process, and returned to the mold-making process, it ceases to be a waste and is no longer subject to RCRA. The portion of spent sand that is not returned to the mold-making process remains a solid waste and, if applicable, a hazardous waste.

Storage and Management of Hazardous Waste: Hazardous waste generated or managed at foundries may be treated, stored, or disposed of in several different types of units (e.g., waste piles). Improper waste management has the potential to threaten human health, ground and surface waters, and soils. To ensure that hazardous wastes are managed safely and properly, specific operating or waste management practices are required by law or regulation.

Thermal Units May be Subject to RCRA: Foundry operations generate a significant amount of waste sand. Typically, the spent foundry sand is physically processed to remove contaminants prior to reuse in the process. In reclaiming the spent sand, some foundries may route this spent sand through a thermal unit to combust the organic binder material in the spent sand. If the spent sand treated in the thermal unit is a hazardous waste, the thermal unit is considered subject to RCRA Subtitle C and would need a permit.

For more information on these requirements, contact your local EPA Regional Office.

Regulatory Definitions

Recycled Material: A material is "recycled" if it is used, reused or reclaimed. [40 C.F.R. § 261.1(c)(7).]

Reclaimed Material: A material is "reclaimed" if it is processed to recover a reusable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents. [40 C.F.R. § 261.1(c)(4).]

Spent Material: A "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing. [40 C.F.R. § 261.1(c)(1).]

Recent Rulemaking Prohibits Treating Foundry Sand with Iron Filings

Under RCRA, Land Disposal Restrictions (LDR) set treatment standards and require that hazardous wastes be treated before they can be disposed of in land disposal units. All hazardous wastes must be treated so that the concentration of hazardous constituents is below a certain level established for each waste. Treatment is required to minimize threats to human health and the environment.

"Land Disposal Restrictions--Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill

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University of Colorado and NEIC Studies

Studies by Dr. John Drexler of the University of Colorado and another by Dr. Douglas Kendall of the EPA's National Enforcement Investigations Center (NEIC) concluded that adding iron to waste foundry sand contaminated with lead does not permanently prevent the release of lead into the environment.

The studies determined that during the Toxicity Characteristic Leaching Procedure (TCLP) (a testing procedure used to identify hazardous waste), if metallic iron is present, the lead concentration in solution will be decreased by an oxidation/reduction reaction to levels that could be below the lead characteristic level. If fresh metallic iron is regularly introduced into the mixture, then soluble lead can be kept at low levels. However, for example, if the mixture is placed in a landfill and left alone, the iron will oxidize, thereby losing its ability to reduce lead ions.

An outside peer review committee, formed to evaluate the results of the studies, supported the conclusion that: *"...treatment of lead-contaminated sands by mixing iron metal filings/powder with the lead-contaminated sands prior to disposal does not constitute an effective treatment process and is not protective of human health and the environment." (See http://www.epa.gov/fedrgstr/EPA-WATER/1997/March/Day-05/w5419.htm Federal Register notice for more on these studies).*

Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters; Final Rule," published May 26, 1998, in the *Federal Register,* prohibits adding iron filings or other metallic forms of iron to lead-containing hazardous waste to achieve the land disposal restriction treatment standard for lead. EPA took this position because studies, like those performed by the University of Colorado and EPA's National Enforcement Investigations Center, revealed that the addition of iron only temporarily stabilizes the lead and, thus, fails to provide long-term treatment for lead-containing hazardous wastes.

EPA Regional Enforcement and Compliance Assistance Efforts

Over the years, several EPA Regions have addressed noncompliance issues at local foundries. For example, in 1995 **EPA Region 6** initiated an inspection program to assess waste management practices and the scope of noncompliance with environmental regulations at foundry operations. Based on an inspection of 27 facilities, the Region found that a substantial number of foundries were not complying with hazardous waste requirements because of a basic lack of understanding and correct interpretation of RCRA. Specifically, the Region found that:

- 85 percent of these facilities were subject to regulation under RCRA;
- Nearly one-third of those facilities subject to RCRA *did not* notify the states or EPA of hazardous waste activity;
- 71 percent of the facilities were found to have potential RCRA violations; and
- 83 percent of the facilities are in minority and/or economically depressed communities.

As a result of its inspections, Region 6, with the support of several states, initiated a program that not only would provide owners and operators with a better understanding of RCRA, the Clean Air Act, and Clean Water Act but also would address specific aspects of these laws applicable to the metal casting or foundry industry.

In April 1995, Region 6 and the Oklahoma Department of Environmental Quality (ODEQ) introduced the "Compliance Assistance and Outreach Pilot Program." As part of the program, a workshop was held for foundry industry representatives and members of the American Foundrymen's Society. Following the workshop, Oklahoma foundries were given 90 to 120 days to correct all compliance problems or self-report significant violations. ODEQ took the enforcement lead for foundries that did not choose to take advantage of the self-disclosure opportunity. Programs similar Oklahoma's also were carried out in Louisiana and Texas.

In addition, Region 6 sponsored a Foundry Compliance Assistance Conference in March 1996 for local owners and operators to discuss lessons learned through the pilot program and to foster greater communication between the foundry industry and the Region. As a result of state support, federal and state enforcement actions, and compliance assistance efforts, local foundries have made improvements to their manufacturing processes and waste management practices that help promote a cleaner and healthier environment.

In other parts of the country, EPA is finding through its investigations that significant compliance issues remain. For example, last year **EPA Region 7** identified significant violations of RCRA requirements at foundries (primarily brass foundries) within the Region. In

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an inspection of 29 foundries, Region 7 found that:

- 70 percent of the inspected facilities had potential RCRA violations;
- Typical violations included the facility's failure to make an adequate waste determination and, as a result, potentially mismanaged hazardous baghouse dust contaminated with lead and chromium; and
- Other violations had been occurring such as illegal on-site waste management by piling of wastes; offering hazardous waste for transportation and disposal at municipal landfills; not labeling and dating hazardous waste; and failures to cleanup hazardous waste spills.

EPA's 'Sustainable Industry' Program

EPA has launched a Sustainable Industry Program for selected industry sectors, such as the metal casting industry (e.g., foundries, diecasters). The program provides industry the opportunity to partner with EPA and other key stakeholders in solving environmental and waste management noncompliance problems. For additional information, visit EPA's Sustainable Industry website at http://www.epa.gov/sustainableindustry or contact: ***Jerry Newsome, EPA's Office of Policy and Reinvention, at (202) 260-8214.***

EPA's Audit Policy and Small Business Policy

EPA has adopted two policies designed to encourage greater compliance with environmental laws and regulations, including RCRA. These policies, "Incentives for Self-Policing, Discovery, Disclosure, Correction and Prevention of Violations" (Audit Policy), and "Policy on Compliance Incentives for Small Businesses" (Small Business Policy), provide incentives to conduct environmental audits by substantially reducing penalties for entities that voluntarily discover, disclose, and expeditiously correct violations of environmental law. For more information, see http://www.epa.gov/oeca/auditpol.html and http://www.epa.gov/oeca/smbusi.html, respectively.

For more information, contact Mark Potts, EPA Region 6, Hazardous Waste Enforcement Branch, at (214)665-6746, Email: potts.mark@epa.gov; Lynn Slugantz, EPA Region 7, RCRA Enforcement and State Programs Branch, at (913) 551-7020, Email: slugantz.lynn@epa.gov; or Vishnu Katari, Office of Regulatory Enforcement, RCRA Division, at (202) 564-4004; Email: katari.vishnu@epa.gov.

Useful Compliance Assistance Resources

RCRA Enforcement Division:
http://www.epa.gov/oeca/ore/red/

Hazardous Waste Resource Conservation and Recovery Act Subtitle C:
http://www.epa.gov/epaoswer/osw/hazwaste.htm#ldr

Office of Solid Waste (Land Disposal Restrictions, Phase IV Treatment Standards Set for Toxicity Characteristic (TC) Metal Wastes, Mineral Processing Wastes, and Contaminated Soil):
http://www.epa.gov/epaoswer/hazwaste/ldr/ldrmetal/facts.htm

EPA Compliance Assistance Centers:
http://www.epa.gov/oeca/mfcac.html

EPA's Small Business Gateway:
http://www.epa.gov/smallbusiness

RCRA, Superfund & EPCRA Hotline:
9 a.m. to 6 p.m. ET, Monday through Friday, except for federal holidays, at the numbers listed below:

National toll-free number *(outside of DC area): (800) 424-9346; Local number (within DC area): (703) 412-9810; National toll-free for the hearing impaired (TDD): (800) 553-7672*